ac.

Notice of Allowability	**Application No.** 10/679,046	**Applicant(s)** DUPUIS ET AL.
	Examiner Erin M. File	**Art Unit** 2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *6/24/2004*.
2. ☒ The allowed claim(s) is/are *44-63,65-71,73-80,82-90 and 92-119*.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 6/24/2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with William Enders on 1/18/2006.

2. The application has been amended as follows:

Claim 44, A communication system, comprising: phone line side circuitry ~~that may be~~ configured to be coupled to phone lines; powered side circuitry ~~that may be~~ configured to be coupled to the phone line side circuitry through an isolation barrier comprised of a plurality of isolation elements; and a DC holding circuit within the phone line side circuitry, the DC holding circuit being switchable to operate in a plurality of DC holding circuit phases, the DC holding circuit having a first time constant in at least a first DC holding circuit phase of operation and having a second time constant in at least a second DC holding circuit phase of operation; wherein the powered side circuitry is configured to communicate a first digital differential signal to at least two of the plurality of isolation elements, the at least two isolation elements comprising at least a first isolation capacitor and a second isolation capacitor; wherein the phone line side circuitry is configured to communicate a second digital differential signal to the first isolation capacitor and the second isolation capacitor so that the first and second digital differential signals are both communicated across ~~the same~~ first and second isolation capacitors ~~and so~~ such that the first and second isolation capacitors bidirectionally transfer the first and second digital differential signals; wherein the powered side circuitry is further configured to provide a clock signal to the phone line side circuitry through at least one of the plurality of isolation elements; and wherein the powered side circuitry and the phone line side circuitry are configured so that power is capable of being provided from the powered side circuitry to the phone line side circuitry while still maintaining the isolation barrier ~~required by the phone line isolation regulatory standards~~.

Claim 46, The communication system of claim 44, the first DC holding circuit phase of operation occurring before the second DC holding circuit phase of operation, wherein the first time constant is shorter than the second time constant.

Claim 47, The communication system of claim 44, the DC holding circuit operable in the first DC holding circuit phase to allow for a first settling time for establishing off-hook conditions and the DC holding circuit operable in the second DC holding circuit phase to allow for a second settling time after the first phase of operation, the second settling time being slower than the first settling time.

Claim 54, A communication system, comprising: phone line side circuitry ~~that may be~~ configured to be coupled to phone lines; powered side circuitry ~~that may be~~ configured to be coupled to the phone line side circuitry through an isolation barrier comprised of a plurality of isolation elements; and a DC holding circuit within the phone line side circuitry, the DC holding circuit being switchable to operate in a plurality of DC holding circuit phases, the DC holding circuit having a first time constant in at least a first DC holding circuit phase of operation and having a second time constant in at least a second DC holding circuit phase of operation; wherein said powered side circuitry is configured to communicate a first digital differential signal to at least two of the plurality of isolation elements, the at least two isolation elements comprising at least a first isolation capacitor and a second isolation capacitor; wherein said phone line side circuitry is configured to communicate a second digital differential signal to the first isolation capacitor and the second isolation capacitor so that the first and second digital differential signals are both communicated across ~~the same~~ first and second isolation capacitors ~~and so~~ such that the first and second isolation capacitors bidirectionally transfer the first and second digital differential signals; wherein the powered side circuitry is further configured to provide a clock signal to the phone line side circuitry through at least one of the plurality of isolation elements that is separate from the first isolation capacitor and the second isolation capacitor; wherein the powered side circuitry and the phone line side circuitry are configured so that power is capable of being provided from the powered side circuitry to the phone line side circuitry while still maintaining the isolation barrier ~~required by the phone line isolation regulatory standards~~; and wherein at least one of the first digital differential signal and the second digital differential signal includes both data information and control information.

Claim 56, The communication system of claim 54, the first DC holding circuit phase of operation occurring before the second DC holding circuit phase of operation, wherein the first time constant is shorter than the second time constant.

Claim 57, The communication system of claim 54, the DC holding circuit operable in the first DC holding circuit phase to allow for a first settling time for establishing off-hook conditions and the DC holding circuit operable in the second DC holding circuit phase to allow for a second settling time after the first phase of operation, the second settling time being slower than the first settling time.

Claim 62, A method of providing a communication system ~~that may be~~ configured to be coupled to a phone line, comprising: coupling an isolation barrier between powered side circuitry and phone line side circuitry, the isolation barrier comprising a plurality of isolation elements; configuring the powered side circuitry to communicate a first digital differential signal to at least two of the isolation barrier elements, the at least two isolation barrier elements comprising at least a first isolation capacitor and a second isolation capacitor; configuring the phone line side circuitry to communicate a second digital differential signal to the first isolation capacitor and the second isolation capacitor so that the first and second digital differential signals are both communicated across ~~the same~~ first and second isolation capacitors ~~and so~~ such that the first and second isolation capacitors bidirectionally transfer the first and second digital differential signals; configuring the powered side circuitry to provide a clock signal to the phone line side circuitry through at least one of the plurality of isolation elements; configuring the powered side circuitry and the phone line side circuitry so that power is capable of being provided from the ~~phone line~~ powered side circuitry to the phone line side circuitry while still maintaining the isolation barrier ~~required by the phone line isolation regulatory standards~~; operating a DC holding circuit in first and second off-hook phases of operation; utilizing a first DC holding circuit time constant during the first phase of operation; and utilizing a second DC holding circuit time constant during the second phase of operation, wherein the first time constant provides faster settling of the DC holding circuit than the second time constant.

Claim 63, The method of claim 62, further comprising operating the DC holding circuit operable in the first phase to allow for a first settling time for establishing off-hook conditions and the second phase of operation ~~having to~~ requires allowing for a second settling time after the first phase of operation.

Claim 64, (cancelled) ~~The method of claim 62, further comprising operating the DC holding circuit operable in the first phase to allow for a first settling time for establishing off-hook conditions and the second phase having to allow for a second settling time after the first phase.~~

Claim 70, A method of providing a communication system ~~that may be~~ configured to be coupled to a phone line, comprising: coupling an isolation barrier between powered side circuitry and phone line side circuitry, the isolation barrier comprising a plurality of isolation elements; configuring the powered side circuitry to communicate a first digital differential signal to at least two of the isolation barrier elements, the at least two isolation barrier elements comprising at least a first isolation capacitor and a second isolation capacitor; configuring the phone line side circuitry to communicate a second digital differential signal to the first isolation capacitor and the second isolation capacitor so that the first and second digital differential signals are both communicated across ~~the same~~ first and second isolation capacitors ~~and so~~ such that the first and second isolation capacitors bidirectionally transfer the first and second digital differential signals, wherein at least one of the first digital differential signal and the second digital differential signal includes both data and control information; configuring the powered side circuitry to provide a clock signal to the phone line side circuitry through at least one of the plurality of isolation elements, wherein the clock signal is provided from the powered side circuitry to the phone line side circuitry through an isolation element that is separate from the first isolation capacitor and the second isolation capacitor; configuring the powered side circuitry and the phone line side circuitry so that power is capable of being provided from the ~~phone line~~ powered side circuitry to the phone line side circuitry while still maintaining the isolation barrier ~~required by the phone line isolation regulatory standards~~; operating a DC holding circuit in first and second off-hook phases of operation; utilizing a first DC holding circuit time constant during the first phase of operation; and utilizing a second DC holding circuit time constant during the second phase of operation, wherein the first time constant provides faster settling of the DC holding circuit than the second time constant.

Claim 72, (cancelled) ~~The method of claim 70, further comprising operating the DC holding circuit operable in the first phase to allow for a first settling time for establishing off hook conditions and the second phase having to allow for a second settling time after the first phase.~~

Claim 76, A communication system, comprising: phone line side circuitry capable of being coupled to phone lines; powered side circuitry capable of being coupled to the phone line side circuitry through an isolation barrier comprised of a plurality of isolation elements; a DC holding circuit within the phone line side circuitry, the DC holding circuit comprising: at least a first circuit within the DC holding circuit, the first circuit affecting the settling time of the DC holding circuit, at least one switchable circuit, the switchable circuit having a first state for a first phase of operation of the DC holding circuit and a second state for a second phase of operation of the DC holding circuit, the at least one switchable circuit coupled to the first circuit, and at least one switched element selectively connectable to the first circuit by the switchable circuit, a time constant of the DC holding circuit changing depending upon the state of the at least one switchable circuit; wherein the powered side circuitry is configured to communicate a first digital differential signal to at least two of the plurality of isolation elements, the at least two isolation elements comprising at least a first isolation capacitor and a second isolation capacitor; wherein the phone line side circuitry is configured to communicate a second digital differential signal to the first isolation capacitor and the second isolation capacitor so that the first and second digital differential signals are both communicated across ~~the same~~ first and second isolation capacitors ~~and so~~ such that the first and second isolation capacitors bidirectionally transfer the first and second digital differential signals; wherein the powered side circuitry is further configured to provide a clock signal to the phone line side circuitry through at least one of the plurality of isolation elements; and wherein the powered side circuitry and the phone line side circuitry are configured so that power is capable of being provided from the powered side circuitry to the phone line side circuitry while still maintaining the isolation barrier ~~required by the phone line isolation regulatory standards~~.

Claim 78, The communication system of claim 76, the DC holding circuit operable in the first phase to allow for a first settling time for establishing off-hook conditions and the second phase having to allow for a second settling time after the first phase of operation, the second settling time being slower than the first settling time.

Claim 81, (cancelled) ~~The communication system of claim 77, the first time constant being at least an order of magnitude shorter than the second time constant.~~

Claim 86, A communication system, comprising: phone line side circuitry capable of being coupled to phone lines; powered side circuitry capable of being coupled to the phone line side circuitry through an isolation barrier comprised of a plurality of isolation elements; a DC holding circuit within the phone line side circuitry, the DC holding circuit comprising: at least a first circuit within the DC holding circuit, the first circuit affecting the settling time of the DC holding circuit, at least one switchable circuit, the switchable circuit having a first state for a first phase of operation of the DC holding circuit and a second state for a second phase of operation of the DC holding circuit, the at least one switchable circuit coupled to the first circuit, and at least one switched element selectively connectable to the first circuit by the switchable circuit, a time constant of the DC holding circuit changing depending upon the state of the at least one switchable circuit; wherein the powered side circuitry is configured to communicate a first digital differential signal to at least two of the plurality of isolation elements, the at least two isolation elements comprising at least a first isolation capacitor and a second isolation capacitor; wherein the phone line side circuitry is configured to communicate a second digital differential signal to the first isolation capacitor and the second isolation capacitor so that the first and second digital differential signals are both communicated across ~~the same~~ first and second isolation capacitors ~~and so~~ such that the first and second isolation capacitors bidirectionally transfer the first and second digital differential signals; wherein the powered side circuitry is further configured to provide a clock signal to the phone line side circuitry through at least one of the plurality of isolation elements that is separate from the first isolation capacitor and the second isolation capacitor; wherein the powered side circuitry and the phone line side circuitry are configured so that power is capable of being provided from the powered side circuitry to the phone line side circuitry while still maintaining the isolation required by the phone line isolation regulatory standards; and wherein at least one of the first digital differential signal and the second digital differential signal includes both data information and control information.

Claim 88, The communication system of claim 86, the DC holding circuit operable in the first phase to allow for a first settling time for establishing off-hook conditions and the second phase of operation having to allow for a second settling time after the first phase of operation, the second settling time being slower than the first settling time.

Claim 91, (cancelled) ~~The communication system of claim 87, the first time constant being at least an order of magnitude shorter than the second time constant.~~

Claim 94, A method of providing a communication system capable of being coupled to a phone line, comprising: coupling an isolation barrier between powered side circuitry and phone line side circuitry, the isolation barrier comprising a plurality of isolation elements; configuring the powered side circuitry to communicate a first digital differential signal to at least two of the isolation barrier elements, the at least two isolation barrier elements comprising at least a first isolation capacitor and a second isolation capacitor; configuring the phone line side circuitry to communicate a second digital differential signal to the first isolation capacitor and the second isolation capacitor so that the first and second digital differential signals are both communicated across ~~the same~~ first and second isolation capacitors ~~and so~~ such that the first and second isolation capacitors bidirectionally transfer the first and second digital differential signals; configuring the powered side circuitry to provide a clock signal to the phone line side circuitry through at least one of the plurality of isolation elements; configuring the powered side circuitry and the phone line side circuitry so that power is capable of being provided from the ~~phone line~~ powered side circuitry to the phone line side circuitry while still maintaining the isolation required by the phone line isolation regulatory standards; forming a DC holding circuit within the phone line side circuitry, the DC holding circuit being formed with internal circuitry internal to an integrated circuit and external circuitry external to the integrated circuit; providing a programmable circuit for switching the DC holding circuit between at least a first and second phase of operation; and configuring the DC holding circuit to allow for the DC holding circuit to operate faster during the first phase of operation and slower during the second phase of operation.

Claim 95, The method of claim 94, further comprising configuring the DC holding circuit to be operable in the first phase of operation to allow for a first settling time for establishing off-hook conditions and in the second phase of operation to allow for a second settling time after the first phase of operation.

Claim 101, A method of providing a communication system capable of being coupled to a phone line, comprising: coupling an isolation barrier between powered side circuitry and phone line side circuitry, the isolation barrier comprising a plurality of isolation elements; configuring the powered side circuitry to communicate a first digital differential signal to at least two of the isolation barrier elements, the at least two isolation barrier elements comprising at least a first isolation capacitor and a second isolation capacitor; configuring the phone line side circuitry to communicate a second digital differential signal to the first isolation capacitor and the second isolation capacitor so that the first and second digital differential signals are both communicated across ~~the same~~ first and second isolation capacitors ~~and so~~ such that the first and second isolation capacitors bidirectionally transfer the first and second digital differential signals, wherein at least one of the first digital differential signal and the second digital differential signal includes both data and control information; configuring the powered side circuitry to provide a clock signal to the phone line side circuitry through at least one of the plurality of isolation elements, wherein the clock signal is provided from the powered side circuitry to the phone line side circuitry through an isolation element that is separate from the first isolation capacitor and the second isolation capacitor; configuring the powered side circuitry and the phone line side circuitry so that power is capable of being provided from the ~~phone line~~ powered side circuitry to the phone line side circuitry while still maintaining the isolation required by the phone line isolation regulatory standards; forming a DC holding circuit within the phone line side circuitry, the DC holding circuit being formed with internal circuitry internal to an integrated circuit and external circuitry external to the integrated circuit; providing a programmable circuit for switching the DC holding circuit between at least a first and second phase of operation; and configuring the DC holding circuit to allow for the DC holding circuit to operate faster during the first phase of operation and slower during the second phase of operation.

Claim 106, A method of operating a ~~DAA~~ direct access arrangement (DAA) circuit, comprising: providing phone line side circuitry capable of being coupled to phone lines; providing powered side circuitry capable of being coupled to the phone line side circuitry through an isolation barrier comprised of a plurality of isolation elements; providing a DC holding circuit within the phone line side circuitry; utilizing a first time constant of the DC holding circuit during a first phase of operation of the DC holding circuit; and utilizing a second time constant of the DC holding circuit during a second phase of operation of the DC holding circuit, settling times of the DC holding circuit being faster during the first phase than during the second; wherein the powered side circuitry is configured to communicate a first digital differential signal to at least two of the plurality of isolation elements, the at least two isolation elements comprising at least a first isolation capacitor and a second isolation capacitor; wherein the phone line side circuitry is configured to communicate a second digital differential signal to the first isolation capacitor and the second isolation capacitor so that the first and second digital differential signals are both communicated across ~~the same~~ first and second isolation capacitors ~~and so~~ such that the first and second isolation capacitors bidirectionally transfer the first and second digital differential signals; wherein the powered side circuitry is further configured to provide a clock signal to the phone line side circuitry through at least one of the plurality of isolation elements; and wherein the powered side circuitry and the phone line side circuitry are configured so that power is capable of being provided from the powered side circuitry to the phone line side circuitry while still maintaining the isolation barrier ~~required by the phone line isolation regulatory standards~~.

Claim 114, A method of operating a ~~DAA~~ direct access arrangement (DAA) circuit, comprising: providing phone line side circuitry capable of being coupled to phone lines; providing powered side circuitry capable of being coupled to the phone line side circuitry through an isolation barrier comprised of a plurality of isolation elements; providing a DC holding circuit within the phone line side circuitry; utilizing a first time constant of the DC holding circuit during a first phase of operation of the DC holding circuit; and utilizing a second time constant of the DC holding circuit during a second phase of operation of the DC holding circuit, settling times of the DC holding circuit being faster during the first phase than during the second; wherein the powered side circuitry is configured to communicate a first digital differential signal to at least two of the plurality of isolation elements, the at least two isolation elements comprising at least a first isolation capacitor and a second isolation capacitor; wherein the phone line side circuitry is configured to communicate a second digital differential signal to the first isolation capacitor and the second isolation capacitor so that the first and second digital differential signals are both communicated across ~~the same~~ first and second isolation capacitors ~~and so~~ such that the first and second isolation capacitors bidirectionally transfer the first and second digital differential signals; wherein the powered side circuitry is further configured to provide a clock signal to the phone line side circuitry through at least one of the plurality of isolation elements that is separate from the first isolation capacitor and the second isolation capacitor; wherein the powered side circuitry and the phone line side circuitry are configured so that power is capable of being provided from the powered side circuitry to the phone line side circuitry while still maintaining the isolation barrier ~~required by the phone line isolation regulatory standards~~; and wherein at least one of the first digital differential signal and the second digital differential signal includes both data information and control information.

3. The following is an examiner's statement of reasons for allowance:

The prior art of record does not teach power delivered from powered side circuitry to phone side circuitry including a DC holding circuit in which first and second digital differential signals are bidirectionally transferred across first and second isolation capacitors.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is (571)272-6040. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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1/18/2006

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SUPERVISORY PATENT EXAMINER